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Washington, D.C. 20005

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Ameritech.

February 26, 1999

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **Ex Parte Statement**
CC Docket 98-147

Dear Ms. Salas:

The attached letter was sent to Mr. Lawrence Strickling, Chief, Common Carrier Bureau, on February 25, 1999 and should be put in the record of the above referenced proceeding.

Sincerely yours,

Toni Acton

Attachment

Terry D. Appenzeller
Vice President, Open Market Strategy
2000 W. Ameritech Center Drive, 4G42
Hoffman Estates, IL 60196

Ameritech

February 25, 1999

Mr. Lawrence Strickling
Chief, Common Carrier Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

RE: CC Docket 98-147, Deployment of Wireline Services Offering Advanced Telecommunications Capability

Dear Larry:

In conjunction with discussions we have had on issues pending in the above proceeding, it was suggested that a follow-up paper on IP Telephony/Public Switched Telephone Network interconnection technical and standards issues be prepared. The following responds to that request based on discussions I have held with our network planners and industry forum/standards representatives.

IP TELEPHONY/PUBLIC SWITCHED TELEPHONE NETWORK INTERCONNECTION

The most common current method of interfacing between providers of IP Telephony and the Public Switched Telephone Network (PSTN) is via Primary Rate ISDN (PRI) service offered from circuit switches.

When Voiceover IP (VoIP) is provided, the PRI interface introduces severe limitations in emulating PSTN-like voice services. While the PRI D-channel does enable some signaling and passes calling number information (for caller ID), it cannot substitute for full SS7 connectivity. The result is that PRI connection cannot be made transparent to calls originating on the PSTN and terminating on an IP network. A caller on the PSTN must first instruct the CO switch to route a call via the PRI to a VoIP gateway by dialing a number associated with the PRI, then dial the final destination telephone number, sometimes adding a personal identification number (PIN) as well. This two-stage dialing looks very similar to early non-equal access dialing arrangements of the 1970's (ENFIA A).

In addition to dialing limitations, many of the features and functions of PSTN voice service do not yet work properly or efficiently across the PRI link to IP networks. These include circuit switched vertical services such as call waiting and call forwarding as well as 911/E911 and operator services. Only work-arounds provide these features and functions now and these work-arounds are not scalable to the mass market.

In order to provide service transparency and scalability, the PRI links need to be replaced with other forms of PSTN/IP interconnection, which include SS7 gateways, access to Advanced Intelligence Network databases, and new PSTN-IP network traffic arrangements and trunking. Vendors are working on these issues and may have some early applications and tests available in 1999. However, there are many national forum/standards issues that need to be resolved in order to launch widespread commercialization of full service VoIP/PSTN interconnection.

As summarized below, it appears that standards work will not complete for 18-24 months.

NATIONAL FORUMS/STANDARDS

IP Protocols: There are several competing protocols (H.323, MGCP, MDCP, SIP, UDP, MPLS) which need to be set for Gateways, CPE and coordination functions to operate properly across multiple networks. The proposed protocols appeal to different segments of the industry with no clear-cut winner.

IP Protocol standards are being addressed by the Internet Engineering Task Force (IETF), ITU subgroups (16,13) ETSI-European Telecom Standards Institute-TIPHON group. Formal ITU approval is expected in First Quarter 2000.

Signaling: Call set-up, PSTN interworking, SS7/ISUP, "Pure" IP Signaling are all being worked on by several forums--ITU subgroups #16, #11, IETF, T1SI, ETSI (TIPHON). Estimated completion is Third Quarter 2000.

Quality of Service (QoS): Several different standards are being developed for IP. DIFFSERV, MPLS, POLICY-BASED NETWORKS for example. Most of the work is being done at ETSI (TIPHON) and T1A1. Estimated completion is Second Quarter 1999.

Numbering/Addressing: Standards activity addresses how IP phones/lines will be addressed. This involves international dialing standards and appears to be a very contentious issue thereby delaying the estimated resolution to late 2000.

There are several industry analysis papers and conference presentations that I have seen which confirm the types of technical issues and estimated standards timeframes in this letter. The most recent was Chuck Byers' (Lucent) presentation entitled "Technology Overview: Migrating From Circuit Switched to Packet Switched Networks" at NARUC on February 19, 1999. I believe FCC representatives were in the audience.

If further information is needed, please let us know.

Sincerely,

Terry Appenzeller
Vice President, Open Market Strategy